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ABSTRACT

This survey was conducted to provide information on the level of computer usage in Canadian community colleges. A 19-question form was mailed to the deans of instruction in 175 Canadian public community colleges identified as such by Statistics Canada. Of these, 111 colleges returned their surveys (a 63% response rate), and the results were processed by the Statistical Package for Social Sciences (SPSS). Questions representing the focus of the survey included queries on the amount of computer utilization for instruction in specific institutions; whether these are mainframe, mini or micro; how many of each computer exist; their brand names; sources for software; software languages used; computer literacy level of instructors; and whether general attitudes toward computers in the classroom environment are positive. It was found that: (1) a resounding number of colleges have microcomputers; almost 70% have at least 10, with many having over 20; (2) word processing activities are restricted to only one-third of the colleges' main or mini computers; and (3) only one-fourth of the instructors are computer literate. A call for the development of a provincial/national scheme for the use of microcomputers in educational institutions concludes the paper. (JB)

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Canadian Community College Computer Usage Survey, May 1983

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I - Purpose of the Survey

This survey was conducted to provide some information on the level of computer usage in Canadian community colleges. How many colleges use computers? What kind of computers are used? Are students exposed to learning by computer? Are instructors computer literate? Many are aware of the administrative use of computers to monitor and store everyday financial or statistical records within colleges. Many colleges educate students through data processing courses providing additional demand on computer resources. Beyond these uses one could suspect that few students, other than computer science students, were acquainted with computers. At a more specific level, what impact are microcomputers having on college educational offerings? Also, can a low level of computer literacy be expected among college instructors? Would this result in a monopoly of education software being held commercially? Lastly, the question of college acceptance of computers, especially microcomputers, as valuable additions to the instructional process was a basis of this survey.

These questions represent the focus of this survey; however, they are, by no means, the only questions asked or the only questions that should have been asked. On the other hand, the results may provide a small window to view computer applications in community colleges. They may also indicate a need by Canadian community colleges to expand their use of microcomputers into each and every teaching area.

II -Metnodology

The method of collecting data for this survey followed, generally, the standard process of a mail questionnaire. The 19-question form was mailed, along with a self-addressed stamped envelope, to 175 Canadian public community colleges identified as such by Statistics Canada on a March 1982 list. The Association of Canadian Community Colleges also confirmed through their membership, the legitimacy of the list. Not surveyed, although on this list, were private colleges in Quebec recognized by Education ministry but outside the publicly funded college definition.

Several techniques for collecting information were used. The questionnaires were addressed to the deans of instruction; a specific date of return was requested. These two may very well have contributed to a 63% return (111 colleges out of 175 surveyed). Those colleges without computers may not have bothered to reply although this is probably not the case. This author assumes that those who did not return the questionnaires simply did not get around to completing the form.

The questionnaire was a single sheet containing questions on both sides designed to be processed easily for computer analysis. The results, received in May 1983, were processed by the Statistical Package for Social Sciences (SPSS). The following data represents a "1983 peek" at computer usage at community colleges in Canada. More detailed results are available from the author.

III - Presentation of Data

Description of Findings Organized Around Questions

Question 1. ARE COMPUTERS UTILIZED IN INSTRUCTION IN YOUR INSTITUTION?

- 99/111 reported "yes" indicating a 90.8% positive report (all percents are adjusted frequencies and do not include missing values)

This strong "yes" reply may indicate either that the hypothesis that computers are used in instruction is true or that most of the returned questionnaires were from colleges with computers.

- 10/111 (9.2%) reported "no" indicating they did not use computers in instruction.

Question 2 - WHAT TYPES OF COMPUTERS ARE USED?

- 40/111 indicated microcomputers (39.6%) while 50/111 (49.5%) indicated a combination of variations of micro, main frame, and mini.
- 9/111 (8.9%) indicated mini only
- 2/111 (2%) indicated main frame only.

Question 3 - IF MAIN FRAME OR MINI, IS THE COMPUTER USED FOR COMPUTER SCIENCE STUDENTS ONLY?

- 9/111 (13.6%) "yes"
- 57/111 (86.4%) "no"
- 45/111 did not answer

Question 4 - DO YOU USE MAIN FRAME OR MINI FOR WORD PROCESSING

INSTRUCTION WITH BUSINESS EDUCATION STUDENTS?

- 23/111 (33.8%) "yes"
- 45/111 (66.2%) "no"
- 43/111 did not answer

Question 5 - IN ADDITION TO MAIN FRAME OR MINI DO YOU HAVE MICROCOMPUTERS?

- 82/111 (92.1%) "yes"
- 7/111 (7.9%) "no"
- 22/111 did not answer

Question 6 - HOW MANY MICROCOMPUTERS DO YOU HAVE?

- None 5/111 (5.0%)
- 1 to 5 13/111 (12.9%)
- 5 to 10 11/111 (10.9%)
- 10 to 20 19/111 (18.8%)
- over 20 51/111 (50.5%)

Just under half of the respondents indicated having over 20 microcomputers in their colleges.

Question 7 - ARE THE MAJORITY OF THESE MICROCOMPUTERS

APPLE? 27/111 (28.7%)

TRS80? 8/111 (8.5%)

COMMODORE? 24/111 (25.5%)

"OTHER" 23/111 (24.5%)

COMBINATION 12/111 (12.8%)

This indicates that no one manufacturer has a monopoly in the colleges. The "other" included COMPUSTAR, IBM/PC, NORTHSTAR, DEC, MICOM, ORION DY-4, OSBORNE, and a few other brands.

So much for the interchangeability of courseware within the

college system. Colleges seem to be purchasing from all suppliers.

Question 8 - IN WHAT TEACHING AREAS ARE THE MICROCOMPUTERS USED?

Findings here indicate an even application through academic, business, health, trades/vocational, technical, adult basic education areas.

Question 9 - WHAT IS THE NATURE OF THE SUBJECT MATTER OF SOFTWARE/COURSEWARE?

The results indicate an even distribution through English/French, math/physics and psychology/sociology. Science garnered more individual choices; however, a majority of 61.7% indicated a "combination" of subject matter.

Question 10 - WHO PRODUCES THE MAJORITY OF THE COURSEWARE/SOFTWARE?

- Commercial 46/111 (47.9%)
- Instructor 19/111 (19.8%)
- Government 2/111 (2.1%)
- Combination 24/111 (25.0%)

Question 11 - WHAT IS THE INSTRUCTIONAL LANGUAGE OF COURSEWARE?

- BASIC 41/111 (44.6%)
- Pascal 1/111 (1.1%)
- PILOT 1/111 (1.1%)
- other 3/111 (3.3%)
- Combination 46/111 (50.0%)

Question 12 - HOW OFTEN ARE THE COMPUTERS AVAILABLE TO STUDENTS?

- Supervised during class 10/111 (10.1%)

- Supervised after class 3/111 (3.0%)
- Unsupervised after class 13/111 (13.1%)
- Other 13/111 (13.1%)
- Combination 60/111 (60.6%)

Question 13 -ARE YOU FAMILIAR WITH EDUCATIONAL SOFTWARE PRODUCERS IN CANADA??

- Yes 48/111 (49.5%)
- No 49/111 (50.5%)

Question 14 - WHAT PERCENT OF YOUR INSTITUTION'S INSTRUCTORS ARE COMPUTER LITERATE?

- below 10% 34/111 (34.0%)
- 10 to 30% 39/111 (39.0%)
- 30 to 50% 17/111 (17.0%)
- 40 to 75% 6/111 (6.0%)
- >75% 3/111 (3.0%)

Question 15 - HOW MANY HOURS PER WEEK ARE INSTRUCTORS ALLOWED ACCESS TO COMPUTER RESOURCES?

- up to 5 hrs. 11/111 (11.8%)
- 6 to 10 12/111 (12.9%)
- 11 to 20 12/111 (12.9%)
- >20 55/111 (59.1%)

The results in the previous question show only one third of most faculty are computer literate. However, the results of this question indicate an opportunity exists to become literate.

Question 16 - DO YOU OR WOULD YOU SUPPORT INSTRUCTORS IN THEIR DEVELOPMENT OF CURRICULUM USING MICROCOMPUTERS?

- Yes 102/111 (96.2%)

- No 4/111 (3.8%)

The results of this question show that the administration of colleges overwhelmingly support instructors in curriculum development using the new technology. We may be on the threshold of a new instructional mode for community colleges.

Question 17 - DO YOU SEE THE INTRODUCTION OF COMPUTERS INTO CLASSROOM LEARNING ENVIRONMENTS AS A POSITIVE DEVELOPMENT?

- Yes 104/111 (97.2%)
- No 2/111 (2.8%)

This microcomputer development may be viewed by the administration as a source of increased productivity. However, instructors may view the microcomputer as a threat to teaching positions and may not be willing to embrace the new technology. Their views should be surveyed for a better indication.

Question 18 - IF YOU ANSWERED "NO" TO QUESTION 1 DO YOU ANTICIPATE USING COMPUTERS FOR EDUCATION?

- yes 6/111 (75.0%)
- no 2/111 (25.0%)
- missing 103/111 (those who answered "yes" to question 1)

Question 19 - IN WHAT AREAS WILL YOU USE THEM?

- Academic 2/111 (7.7%)
- Technical 1/111 (3.8%)
- Other 1/111 (3.8%)
- Combination 22/111 (84.6%)
- Missing 85/111 (those who answered "yes" to question 1)

IV - Conclusions

Computers and especially microcomputers are making inroads into college teaching areas. Most colleges use computers, main frame, mini, or micro in many areas of instruction. At one time, only computer science students were given access to computers;however, this survey indicates the access is spreading to other areas. Indications from Question 4 results are that word processing activities are restricted to only one third of the colleges' main or mini computers. "Word process" education must be shifting towards a microcomputer base. That microcomputer base is large according to results of Questions 5 and 6. A resounding number of colleges are using microcomputers, and almost 70% of them have at least 10 microcomputers with the mode being over 20 microcomputers. From Question 14 data, a picture develops of low computer literacy among college instructors; only 1/4 are rated literate. Fortunately, the opportunity and resources exist for instructors to embrace the new technology. Many of their fears of being replaced by computers may be allayed. Most importantly, there should be the development of a provincial/national scheme for the use of the microcomputer in educational institutions. What Canada may be facing is the proliferation of many brands of microcomputers in schools without interchangeable courseware. Compounding that will be the localized instructor-developed material useable only with a few particular classes. Much is changing in educational technology in Canadian community colleges, and it's like a confused cavalry riding off in all directions.